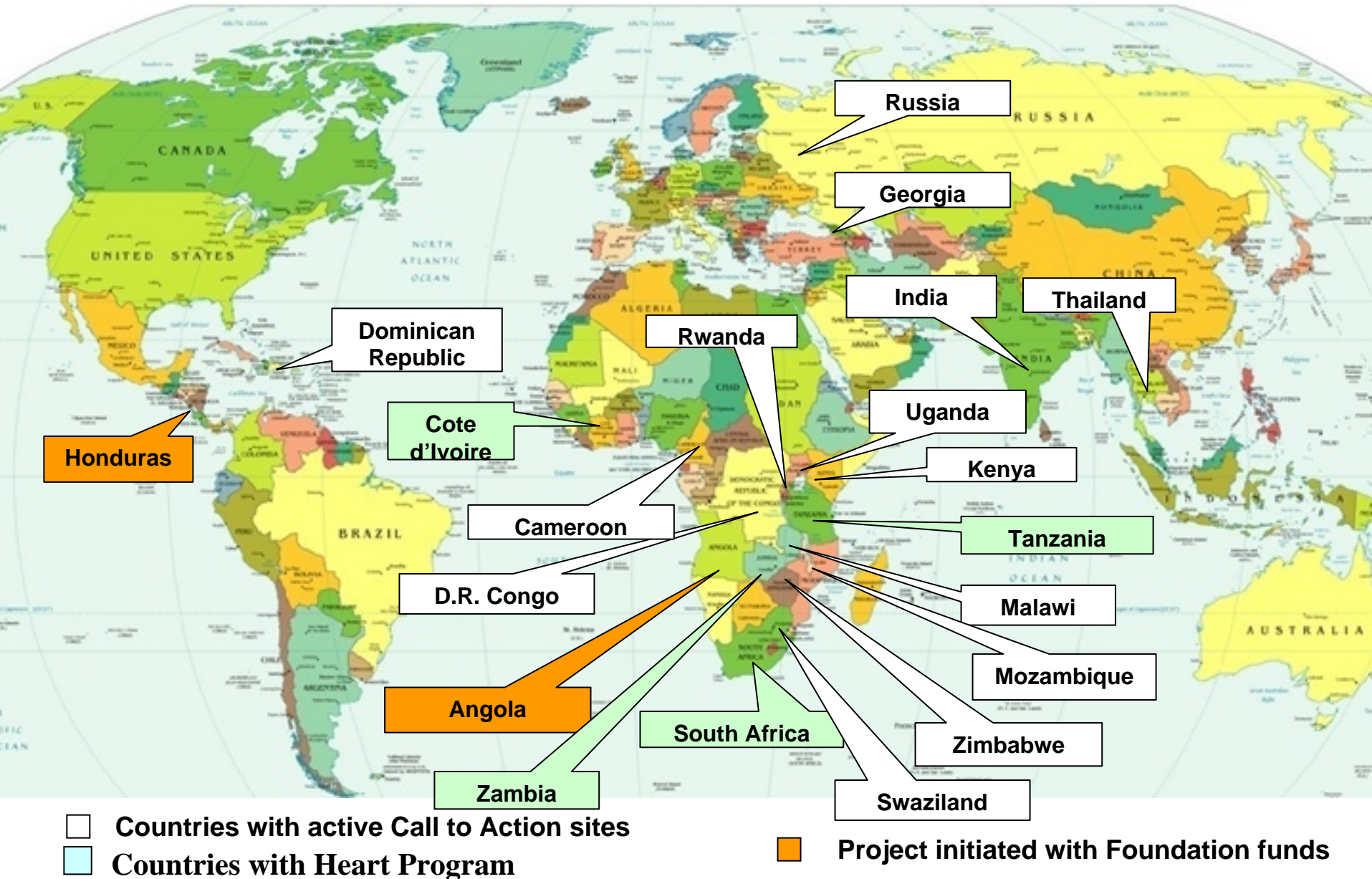


Experience With ARV Regimens for Infants/Children in Resource Constrained Settings



Catherine M Wilfert, MD
Scientific Director
Elizabeth Glaser Pediatric AIDS Foundation

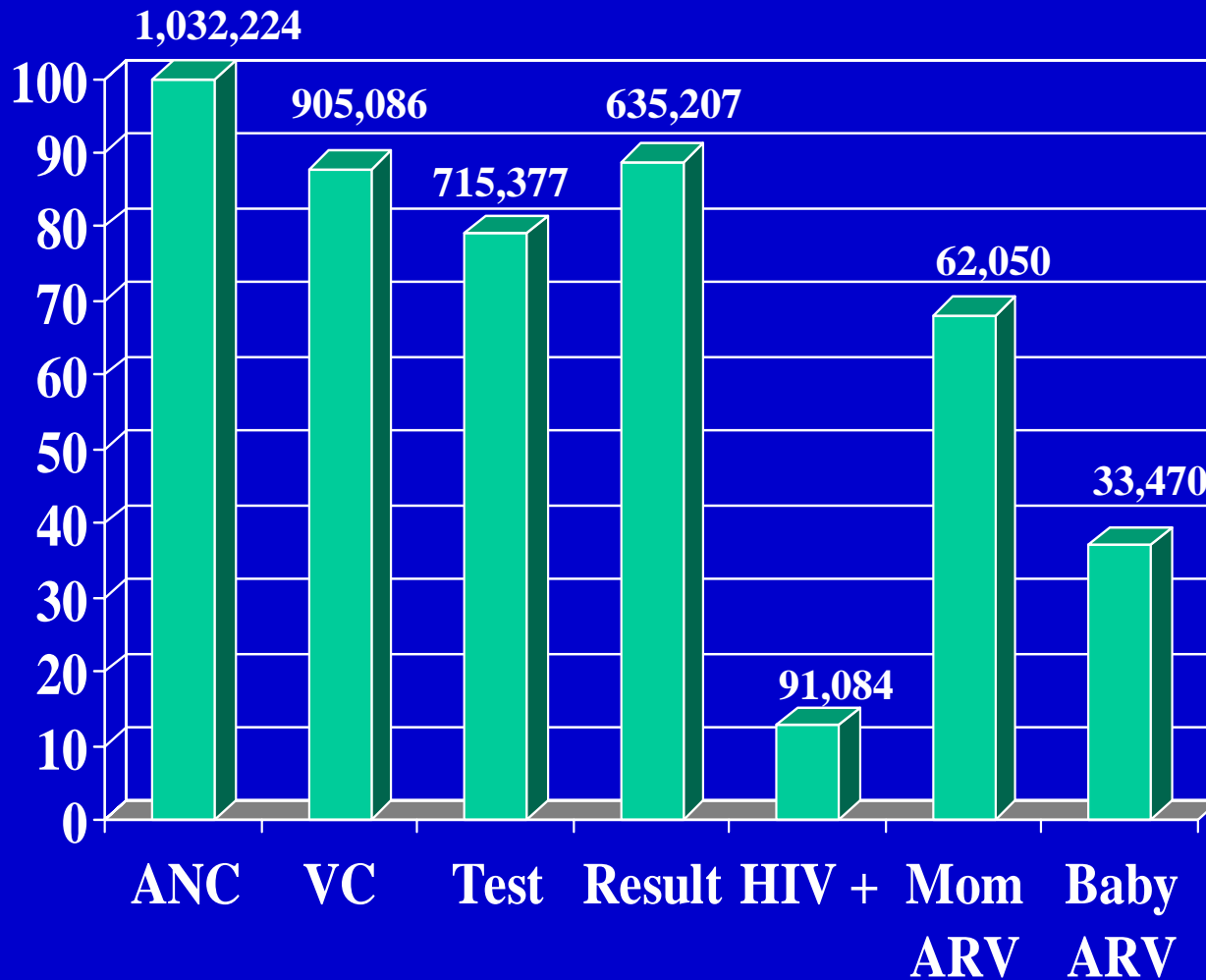
Call to Action has grown from 8 sites in 6 nations in 2000 to more than 500 sites in 19 countries



CTA Percentages and Totals (as of 6/30/04)



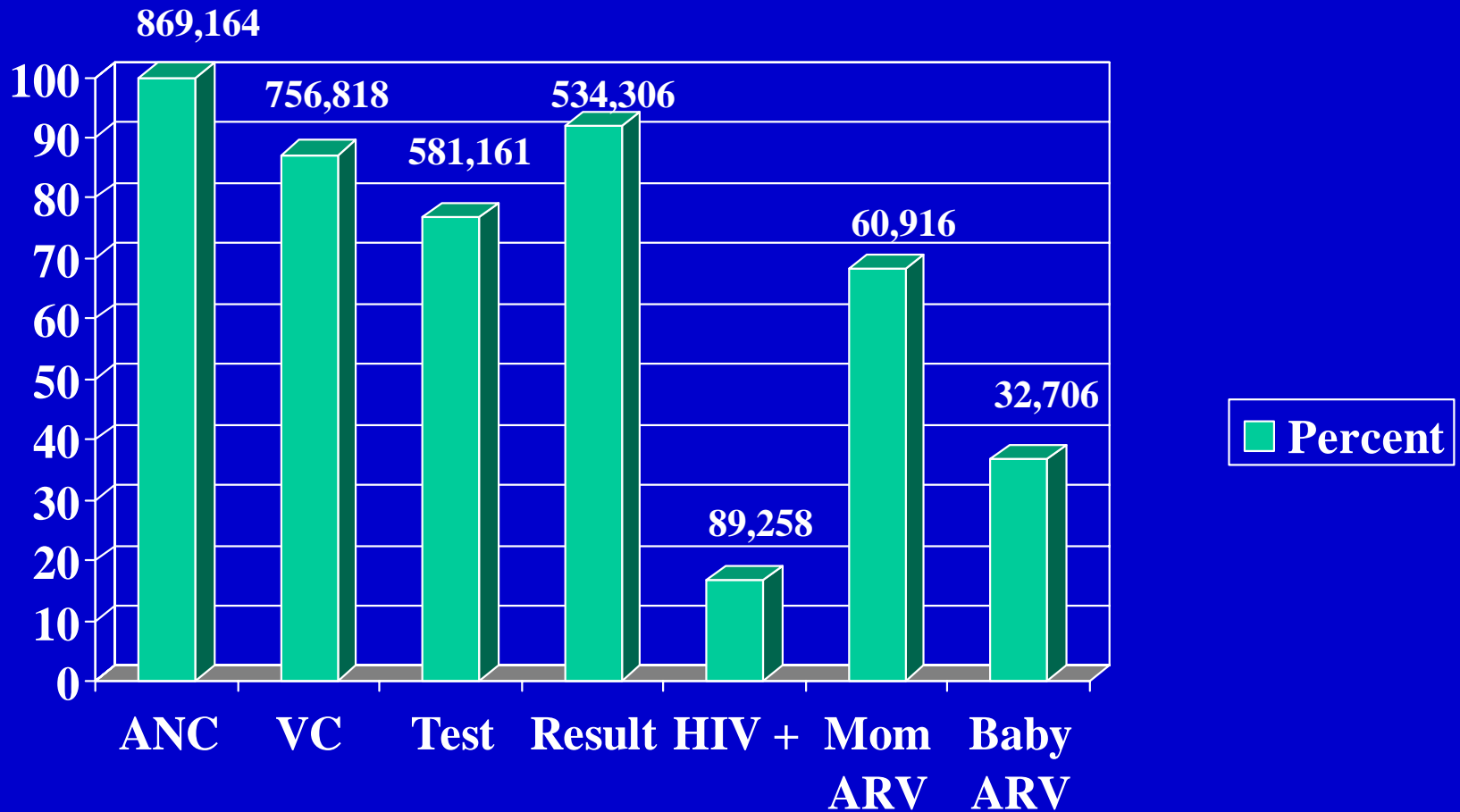
Excluding support to Thailand National Program



Percentages and Totals: CTA Africa Sites (as of 6/30/04)



(Cameroon, DR Congo, Kenya, Malawi, Rwanda, South Africa, Tanzania, Uganda, Zambia, Zimbabwe)





PMTCT to CARE



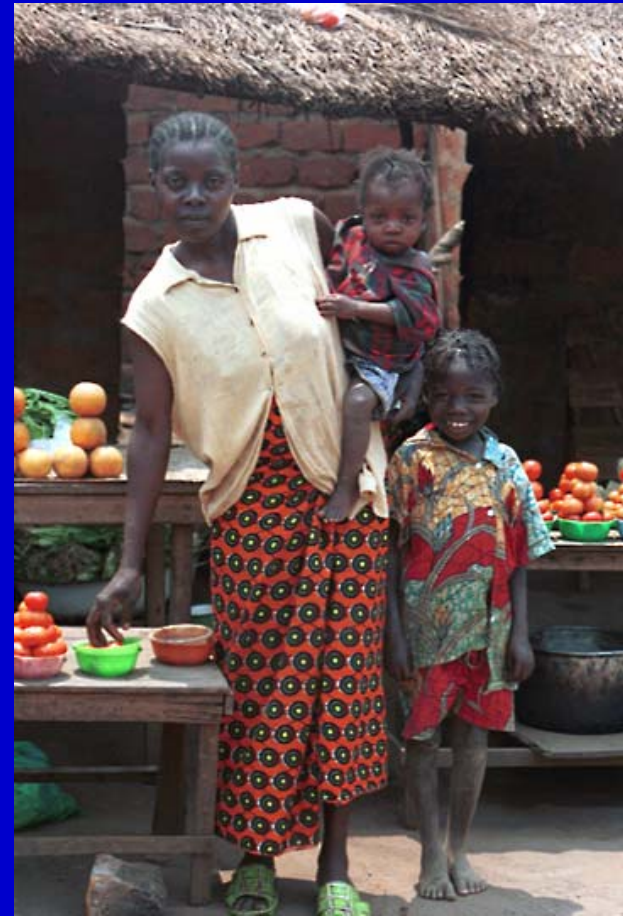
Establishment of PMTCT Services prepares for and facilitates the provision of care including ARVs.

PMTCT should be an integral component of care and support

Project HEART



Help
Expand
Anti-
Retroviral
Therapy
for Children and Families





HEART Accomplishments

- **Total # of Sites Providing Tx in 3 countries** **8**
- **Total # of Patients Enrolled** **9,305**
- **Total # on ARVs** **4,555**
- **Total # of Children on ARVs** **405**

Patient Enrollment through Sept 30, 2004: Côte d'Ivoire, South Africa, Tanzania, and Zambia



Country	Adults, Care and Support:	Children, Care and Support:	Total, Care and Support:	Adults, ART:	Children, ART:	Total, ART:
Zambia	2,606	83	2,689	2,900	50	2,950
Côte d'Ivoire	1,956	?	1,956	600	252	852
South Africa	4,315	345	4,660	611	58	669
Tanzania				444	45	489
Total	8,877	428	9,305	4,555	405	4,960



Treating Children Must be a Priority



- **Children respond well to therapy and the benefits of therapy have greatly exceeded the measured toxicities of treatment.**
- **Successful ARV treatment in children is substantiated by:**
 - 1) **longer lives**
 - 2) **improved growth**
 - 3) **improved cognitive function**
 - 4) **diminished opportunistic infections**
 - 5) **decreased virus burden**
 - 6) **improved immune function with increased CD4 counts.**

Pediatric HIV in Africa



- Mortality is 33% in first 12 months, 50% by 24 months and 60% by 3 years.
- 40% HIV+ children < 18 months in clinics experience developmental delays.
- 80% of these children have CD4 < 20%.
- 82% are at less than < 5% weight, and 47% are considered “stunted”
- Most of children being treated are long-term survivors, i.e. not infants.

Musoke; Mulago Hospital, Uganda. Currently following 2500 children

Pediatric HIV Treatment



- **Rapid disease progression occurs in the majority of infants in resource poor settings but therapy of children often is a lower priority in setting of understaffing and many sick adults.**
- **Longitudinal prospective care of HIV exposed infants is essential to prevent OIs, to offer ARVs and prevent deaths**
- **Recommendations for treatment of children < 18 months of age MUST consider that most HIV infected children will lack access to PCR and/or CD4 count/percent**



Lessons Learned: Pediatric HIV Treatment



- Important to integrate PMTCT, care and treatment in Maternal-Child Health clinics. Providers should consider enhancing care of mothers in WCC as a continuum, with better provision of family planning, nutritional support, and knowledge of HIV status.
- Care for children < 5 yrs occurs in well child clinics (WCC) but usually without a defined linkage to mom's HIV status. The infant "hand held record" usually lacks any maternal information. This information is essential for care of mother and child.

Pediatric HIV Treatment



- **Most HIV-exposed infants (<18mo) do not have access to laboratory tests (e.g. CD4, PCR) which make a definitive diagnosis and establish immune status.**
- **Create clinical guidance for treatment of HIV exposed infants with and without the availability of laboratory support.**



Pediatric HIV Treatment

- **There is a paucity of trained pediatric health care professionals in resource poor settings**
- **Existing pediatric professionals lack experience in the monitoring and treatment of HIV**
- **Identification of the providers and provision of training (doctors, nurses, medical officers, clinical officers) is essential**
- **These professionals need to be encouraged and given permission to treat children**



Challenges in Pediatric HIV Treatment: ARV Drugs



- **Lack of pediatric labeling for ARV drugs for both brand and non-brand, especially for infants.**
- **Lack of pediatric formulations, especially liquids and fixed dose combos manufactured by non-brand pharmaceutical companies.**
- **Higher costs associated with treating children**

Limitations of Pediatric Labeling: NRTIs (brand name)



- **Combivir (AZT/3TC): Only >12 years**
- **Emtricitabine (FTC): No Pediatric indication**
- **Lamivudine (3TC): 3mo-16 yr***
- **Zidovudine (AZT): birth-12 yr***
- **Zalcitabine (ddC): only >13 yr**
- **Trizivir (ABC/AZT/3TC): only > 40kg**

* = oral solution/suspension available



Limitations of Pediatric Labeling: NRTIs (brand name)



- **Didanosine (ddI): 2 wk-19yrs***
- **Didanosine EC (delayed release capsules): No pediatric indication**
- **Tenofovir: No pediatric indication**
- **Stavudine (d4T): Birth-Adolescence***
- **Stavudine XR (slow release): no pediatric indication**
- **Abacavir: 3mo-13 yrs***

* = oral solution/suspension available



Limitations of Pediatric Labeling: **Pis** (brand name)



- **Amprenavir: 4 yrs-12 yrs***
- **Indinivir: 4 yrs-15 yrs**
- **Saquinivir (soft gel capsule): No pediatric indication**
- **Saquinavir (Hard Gel capsule): >16yrs**
- **Lopinavir/Ritonavir: > 6mo***
- **Fosamprenavir: No pediatric indication**
- **Ritonavir: (? no pediatric indication)**
- **Atazanavir: No pediatric indication**
- **Nelfinavir: 2yrs-13 yrs ***

* = oral solution/suspension available

WHO Pre-qualified Pediatric Formulations (non-Name Brand)



- **Lamivudine Solution and 100mg tabs:** Cipla
- **Zidovudine solution:** Cipla
- **Zidovudine solution:** Combino Pharm (Spain)
- **D4T in 30mg or 40 mg:** Hetero Drugs and Ranbaxy



Cost of Treating Children is Higher than Treating Adults



- Calculating cost of d4T/3TC/NVP based on WHO based dosages range from \$43.00-\$99.00/month depending on weight of child, dosage, and form taken.
- This is from 1 ½ to 2 ½ times the cost of treating an adult with brand name drugs. When compared to cost of non-name brand drugs for adults, difference is much greater.

Recommendations: Programmatic Improvements



- **Work must be done to develop better pediatric-specific diagnostic capacity and supplies.**
- **Create clinical guidelines for treatment of children <18 months of age for sites with and without capacity for PCR & CD4.**
- **Integrate care and treatment activities in OPD and provide continuum of services for families in MCH, including septrin.**
- **Urgently train staff to support the care and treatment of HIV-positive children.**

Recommendations: Pediatric ARVs



- Demand data for precise dosing for all ARV for all age groups by both brand and non-brand pharmaceutical companies.
- Encourage the development of pediatric formulations by both brand and non-brand companies. Encourage non-brand companies to apply to FDA expedited process and to WHO
- All brand and non-brand ARVs, including FDCs, must be available in pediatric formulations at drastically reduced costs in resource-poor countries. Continue voluntary licenses provided by brand companies to non brand companies to encourage local production.

Recommendation: Public Policy Advocacy



- As they begin to scale-up care and treatment programs, governments and multilaterals need to include children as part of their overall treatment agenda.
- EGPAF Global Treatment Agenda:
www.pedaids.org





**Once every generation,
history brings us to an
important crossroads.
Sometimes in life there is
that moment when it's
possible to make a change
for the better. This is one
of those moments.**

- Elizabeth Glaser

